



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,338	12/07/2005	Victor D. Geockner	27726-99611	7738

23644 7590 12/29/2008
BARNES & THORNBURG LLP
P.O. BOX 2786
CHICAGO, IL 60690-2786

EXAMINER

RALIS, STEPHEN J

ART UNIT	PAPER NUMBER
----------	--------------

3742

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

12/29/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patent-ch@btlaw.com

Office Action Summary	Application No. 10/541,338	Applicant(s) GEOCKNER ET AL.	
	Examiner STEPHEN J. RALIS	Art Unit 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-24 and 26-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-24 and 26-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 July 2005 and 10 January 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Applicant is respectfully requested to provide a location within the disclosure to support any further amendments to the claims due to when filing an amendment an applicant should show support in the original disclosure for new or amended claims. See MPEP § 714.02 and § 2163.06 ("Applicant should specifically point out the support for any amendments made to the disclosure.").

Continued Examination Under 37 CFR 1.114

3. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 22 September 2008 has been entered.

Response to Amendment/Arguments

4. Applicant's arguments filed 22 September 2008 have been fully considered but they are not persuasive as set forth below.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 2-24 and 26-31 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In the instant case, the recitation to “providing a fixed DC output from the power supply”, (claim 29); “the power supply having a fixed DC voltage output of substantially a predetermined value regardless the AC voltage within the range of AC voltages” (claim 30); and “the power supply having a fixed DC voltage output of substantially a predetermined value regardless of whether the input is coupled to the domestic AC voltage or the foreign AC voltage” (claim 31). There is no recitation to a “fixed DC output from the power supply” only a “DC output from the power supply”.

7. Claims 2-24 and 26-31 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Art Unit: 3742

In the instant case, The recitation as noted above of a "fixed DC output from a power supply regardless of the AC voltage (input)" (emphasis added) is non-enabling. If the AC voltage is zero, the DC output will be zero. Similarly, if the AC input voltage is infinite, the DC voltage can be infinite. It is clear that the DC output from the power supply is dependent from the AC voltage input instead of "regardless. Further clarification is required with respect to "fixed DC output" and the power supply.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claim 2-24 and 26-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

There are many recitations throughout the claims to "coupled, coupling, and variations thereof. It is unclear and uncertain to the examiner to whether the action "to couple" is "to make a pair or pairs" or "link together". Further clarification is required. The claims were examined as the action of "to couple" being to "link together".

Claim 2 recites the limitation "a different AC voltage" in lines 3-4 and 4-5. It is unclear and uncertain to the examiner to whether each "different AC voltage" is the same or different. Further clarification is required. The claims were examined as the second recitation to "a different AC voltage" as being the same as the first recitation to "a different AC voltage".

Claim 2 recites the limitation "the specific voltage" in line 3; Claim 13 recites the limitation "the tank" in lines 3 and 5; Claim 30 recites the limitation "the AC voltage" in lines 4-5. There is insufficient antecedent basis for these limitations in the claims.

In general, the claims are replete with such 35 U.S.C. 112, second paragraph issues. The above notes are exemplary with respect to all of the 35 U.S.C. 112, second paragraph rejections present in the instant case, all claims must be carefully reviewed and appropriate corrections should be made in response to this rejection.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 2, 3, 21-23, 26, 27 and 29-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Kimura (U.S. Patent No. 4,886,955).

Kimura discloses a beverage apparatus (see Figure 1) that is operable over a range of AC voltages, the beverage apparatus including: a power supply (capacitor 39) having an input that couples to an AC voltage source (AC source 35), the power supply (capacitor 39) having a DC voltage output of substantially a predetermined value regardless of the AC voltage within the range of AC voltages (column 4, lines 24-29, 35-44); a heating element (heater 3) directly coupled to the AC voltage source (AC source 35) in parallel with the power supply (capacitor 39) (see Figure 2); and a controller

Art Unit: 3742

(switching mechanisms 32, 34 / sensor, etc.) coupled to the DC voltage (capacitor 39) output to receive power from the power supply (capacitor 39) (see Figure 2), the controller being configured to control the operation of the heating element (column 3, line 65 – column 5, line 60).

With respect to claims 29 and 31, Kimura discloses providing a container (flask 5) for retaining a liquid to be heated (see Figure 1); providing a heating element (heater 3); coupling the heating element directly to the supply voltage regardless of whether the supply voltage is the domestic AC voltage or the foreign AC voltage (see Figure 2); providing a power supply (capacitor 39) capable of receiving a variety of input voltages; coupling an input of the power supply directly to the supply voltage regardless of whether the supply voltage is the domestic AC voltage or the foreign AC voltage (see Figure 2); providing a DC output from the power supply (capacitor 29) (column 4, lines 35-43); providing a controller (switching mechanisms 32, 34 / sensor, etc); coupling the controller (switching mechanisms 32, 34 / sensor, etc) to the DC output from the power supply (capacitor (39))(see Figure 2); operating user inputs to signal the controller coupled to the DC voltage output to control the operation of the heating element to heat liquid contained in a container (main power switch 26).

With respect to the limitations of the apparatus being operable by a supply voltage that is either a domestic AC voltage or a foreign AC voltage is being deemed intended use, it has been held that a recitation with respect to the manner in which a claim apparatus/process is intended to be employed does not differentiate the claimed apparatus/process from a prior art apparatus/process satisfying the claimed limitations.

Art Unit: 3742

Kimura discloses an apparatus that is operated via an AC source (35). The examiner respectfully notes that the AC source may be either a domestic source (being a US patent) or a foreign source (inventor being Japanese).

Kimura explicitly discloses an AC voltage source (35) being connected in parallel to capacitor (39). Kimura further discloses that the controller (relays 32, 33) is driven by DC supply (column 4, lines 35-43). Even though the heater (3) is being driven by the AC source, the relays (32, 33) are driven by a fixed DC supply, or fixed DC power supply, that can only be dependent on the capacitor (39) utilized in the designed configuration (see Figure 2). Therefore, the DC supply, or DC power supply is considered a fixed substantially predetermined value since the hardware capacitor (39) is selected based on a desired configuration and the capacitor (39) will output a fixed substantially predetermined value based on the AC voltage input to the capacitor (39) due to the selected capacitor (39). Furthermore, AC voltages are never constant and inherently fluctuate over a range and Kimura would output a fixed predetermined value dependent of the selection of the capacitor (39) regardless of the AC voltage source and the range thereof, since the capacitor (39) is selected based on output and input characteristics.

Furthermore, if the AC voltage is zero, the DC output will be zero. Similarly, if the AC input voltage is infinite, the DC voltage will be infinite. Clearly, the DC voltage output is a fixed substantially predetermined value dependent on the selection characteristics of the capacitor (39), input and desired output. Therefore, the term “fixed DC output” is examined as a –constant DC output value– relative to the input and capacitor selection. Therefore, Kimura fully meets “a power supply having an input that couples to an AC

Art Unit: 3742

voltage source, the power supply having a fixed DC voltage output of substantially a predetermined value regardless of the AC voltage within the range of AC voltages” given its broadest reasonable interpretation.

With respect to the limitations of claims 2 and 27, Kimura disclose a switch (relay 32) that provides AC voltage to the heating element (heater 3). In regards to applying a different AC voltage depending on the area in which the apparatus is operated, AC voltage fluctuates regularly independent of location and is different in various locations as well. Kimura explicitly discloses an AC voltage source (35) providing AC current to the heater (3) regardless of the AC voltage source location or area of operation. Therefore, Kimura fully meets “the controller comprises a switch that is closeable to apply a specific AC voltage to the heating element if the beverage apparatus is operated in an area with the specific voltage and to apply a different AC voltage to the heating element if the beverage heating apparatus is operated in an area with a different AC voltage” given its broadest reasonable interpretation.

With respect to the limitations of claim 3, Kimura discloses a solid state processor (see Figure 2) that provides a signal to open/close the relays (32, 33). Therefore, Kimura fully meets “a processor that controls the switch” given its broadest reasonable interpretation.

With respect to the limitations of claims 21, 22 and 23, Kimura discloses a power indication lamp (27) that is used for sensing temperatures (sensing temperatures being a notification/alarm of a certain temperature setting) coupled to the DC voltage output of the DC power supply (capacitor 39) (see Figure 2). Therefore, Kimura fully meets “a

Art Unit: 3742

display to which the DC voltage output of the power supply is coupled”, “light to which the DC voltage output of the power supply is coupled.”, and “an alarm to which the DC voltage output of the power supply is coupled” given its broadest reasonable interpretation.

With respect to the limitations of 26, Kimura discloses thermal switches (29, 34) that are coupled to the controller (relay/sensor configuration) that are indicative to the temperature of the liquid in the container.

With respect to the limitations of a control valve, Kimura discloses a control valve (21) comprising a shape memory alloy (2), a spring (23) and a valve body (24) which operates via the temperature of the air (column 3, lines 54-59).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

Art Unit: 3742

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

14. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

15. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kimura (U.S. Patent No. 4,886,955) in view of Miller (U.S. Patent No. 6,100,518).

Kimura discloses all of the limitations of the claimed invention, as previously set forth, except for the use of a triac instead of the use of a relay or solid state relay.

However, Miller teaches that a triac is an equivalent structure known in the art (column 4, line – column 5, line 2). Therefore, because these three switching elements were art recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute a triac for a relay or solid state relay.

Art Unit: 3742

16. Claims 5-7, 11, 16 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimura (U.S. Patent No. 4,886,955) in view of Herrick et al. (International Publication WO 00/11914).

Kimura discloses all of the limitations of the claimed invention, as previously set forth, except for a solenoid to which the DC voltage output of the power supply is coupled, wherein the solenoid is operable to dispense a beverage; valves (dispensing and refill valves) to which the DC voltage output of the power supply is coupled; and a sensor being a capacitance sensor.

However, utilizing a solenoid and valve to which DC voltage is coupled, is known in the art. Herrick et al., for example, teach a liquid pump (15) being a pump or solenoid and being electrically connected to the power supply and permitting flow of product (page 21, lines 19-20; see Figures 1, 17, 22) and inlet/refill and outlet/dispensing sealants (159, 161) functioning as valves having an electrical and fluid seal controllable via electrical connections 163 and 167 (page 23, lines 1-22). Such a DC powered mechanism provides the advantage of providing a non-gravitational control of the fluid flow through a fluid heating system, thereby inherently providing a more accurate means to control a valve.

Herrick et al. further teach that it is known to utilize temperature sensors and conductance sensors together in beverage dispensing apparatus (temperature sensor 19 and a conductance sensor; page 8, line 24 – page 9, line 19; page 18, line 24 - page 19, line 16; see Figures 1, 17, 22) to provide more information about the variables of the fluid to be heated (i.e. flow rate, temperature, conductance), thereby improving

Art Unit: 3742

the closed control loop regulation of a beverage heating apparatus (page 19, lines 4-21).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the gravitation/temperature dependent valve of the Kimura beverage heating apparatus with a solenoid valve and DC control thereof of Herrick et al. in order to provide a non-gravitational control of the fluid flow through a fluid heating system, thereby inherently providing a more accurate means to measure and control a valve. It would have further been obvious to one of ordinary skill in the art at the time of the invention was to modify Kimura with the addition of a conductance sensor in conjunction with the existing temperature sensor of Herrick et al. in order to provide more information about the variables of the fluid to be heated, thereby improving the closed control loop regulation of a beverage heating apparatus.

17. Claims 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimura (U.S. Patent No. 4,886,955) in view of Funk (U.S. Publication No. 2001/0048958).

Kimura discloses all of the limitations of the claimed invention, as previously set forth, except for a concentrate dispenser within the beverage dispenser including a valve that is operable to dispense a beverage concentrate, a pump, having a rotatable shaft, that is operable to move the beverage concentrate and a sensor sensing the speed at which the shaft rotates; and a display.

However, a beverage dispenser comprising a concentrate dispenser including a valve that is operable to dispense a beverage concentrate, a pump, having a rotatable shaft, that is operable to move the beverage concentrate and a sensor sensing the speed at which the shaft rotates, as described by Funk, is known in the art. Funk teaches a concentrate dispenser (32) within the beverage dispenser (20) including a valve that is operable to dispense a beverage concentrate (gating device 62), a pump, having a rotatable shaft, that is operable to move the beverage concentrate (pump 60 being a peristaltic pump that inherently has a rotating shaft) and a sensor sensing the speed at which the shaft rotates (a variable speed pump 60 being controllable via a controller inherently has a sensor to control and sense the variable speeds; page 3, paragraph 27-28; see Figure 3) to precisely control amount of concentrate injected into the dilution stream of the beverage dispenser, thereby providing better control of the quality of the dispensed beverage. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Kimura with the concentrate dispenser an control thereof of Funk to precisely control amount of concentrate injected into the dilution stream of the beverage dispenser, thereby providing better control of the quality of the dispensed beverage.

18. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kimura (U.S. Patent No. 4,886,955) in view of Herrick et al. (International Publication WO 00/11914) as applied to claims 5-7, 11, 16 and 28 above, and further in view of Greenwald et al. (U.S. Publication No. 2004/0163546).

The Kimura-Herrick beverage heating apparatus combination discloses all of the limitations, as previously set forth, except for the apparatus further comprising a heated water tank and the heating element being operatively associated with the heating element and the sensor sensing the temperature of the heated water tank.

However, a pre-heated water tank for a beverage dispensing apparatus with a temperature sensor is known in the art. Greenwald et al., for example, teach a beverage heating apparatus comprising holding tanks at various temperatures (see Figures 1-4). Greenwald et al. further teach specific holding tank (2) that is maintained a temperature " T_i " which is lower than the output temperature of brewing coffee (page 2-3, paragraphs 37-38). Such a mechanism of a pre-heated temperature controlled reservoir tank provides the advantage of requiring less energy and time to perform the beverage heating at the time of serving, thereby inherently increasing the efficiency of the beverage heating apparatus. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the Kimura-Herrick beverage heating apparatus combination with a pre-heated reservoir tank and sensor therein associated with the heating element of Greenwald et al. in order to provide the advantage of requiring less energy and time to perform the beverage heating at the time of serving, thereby inherently increasing the efficiency of the beverage heating apparatus.

19. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kimura (U.S. Patent No. 4,886,955) in view of Funk (U.S. Publication No. 2001/0048958) as

Art Unit: 3742

applied to claims 7-12 above, and further in view of Greenwald et al. (U.S. Publication No. 2004/0163546).

The Kimura-Funk beverage heating apparatus combination discloses all of the limitations, as previously set forth, except for the apparatus further comprising a heated water tank and the heating element being operatively associated with the heating element and the sensor sensing the temperature of the heated water tank.

However, a pre-heated water tank for a beverage dispensing apparatus with a temperature sensor is known in the art. Greenwald et al., for example, teach a beverage heating apparatus comprising holding tanks at various temperatures (see Figures 1-4). Greenwald et al. further teach specific holding tank (2) that is maintained a temperature " T_i " which is lower than the output temperature of brewing coffee (page 2-3, paragraphs 37-38). Such a mechanism of a pre-heated temperature controlled reservoir tank provides the advantage of requiring less energy and time to perform the beverage heating at the time of serving, thereby inherently increasing the efficiency of the beverage heating apparatus. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the Kimura-Funk beverage heating apparatus combination with a pre-heated reservoir tank and sensor therein associated with the heating element of Greenwald et al. in order to provide the advantage of requiring less energy and time to perform the beverage heating at the time of serving, thereby inherently increasing the efficiency of the beverage heating apparatus.

Art Unit: 3742

20. Claims 14, 15 and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimura (U.S. Patent No. 4,886,955) in view of Funk (U.S. Publication No. 2001/0048958) as applied to claims 7-12 above, and further in view of Liverani et al. (U.S. Publication No. 2004/0163546).

The Kimura-Funk beverage heating apparatus combination discloses all of the limitations, as previously set forth, except for a cooling cabinet and a heat sink and temperature sensors sensing a portion of each component, and both being cooled by a fan coupled to the DC voltage output of the power supply.

However, a beverage dispensing apparatus comprising a cooling cabinet and a heat sink and both being cooled by a fan coupled to the DC voltage output of the power supply, as described by Liverani et al., is known in the art. Liverani et al. teach a conventional heat exchanger (5, 34; page 2, paragraphs 31, 35) capable of instantaneously heating water. Liverani et al. further teach that a cooling cabinet (loading compartment 45) for mixing the hot water with the appropriate mixer may be associated with a heat sink (Peltier cell 48) and a cooling fan 50 to cool the heat sink and thereby in return cool the cooling cabinet to prevent the decay of the product, thereby increasing the quality and enjoyment of the dispensed beverage (page 1, paragraphs 7-16; page 2-3, paragraph 36). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the Kimura-Funk beverage heating apparatus combination with the cooling cabinet / heat sink / fan cooling configuration of Liverani et al. to prevent the decay of the product, thereby increasing the quality and enjoyment of the dispensed beverage.

21. Claims 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimura (U.S. Patent No. 4,886,955) in view of Jarocki et al. (U.S. Patent No. 6,312,589).

To the degree it can be argued that Kimura does not teach “a display to which the DC voltage output of the power supply is coupled”, “light to which the DC voltage output of the power supply is coupled.”, and “an alarm to which the DC voltage output of the power supply is coupled”, the additional reference is applied to Kimura as set forth. In addition, Kimura discloses all of the limitations of the claimed invention, as previously set forth, except for an auxiliary power supply configured to convert the DC voltage output of the power supply to another power supply voltage.

However, a beverage dispensing apparatus having a light to which the DC voltage output of the power supply is coupled; an alarm to which the DC voltage output of the power supply is coupled; and an auxiliary power supply configured to convert the DC voltage output of the power supply to another power supply voltage, as described by Jarocki et al., is known in the art. Jarocki et al. teach a light (three color LED lamp indicators on the front of control box 45; column 8, lines 45-55; column 10, lines 25-44; see Figure 5D) and an alarm (column 8, lines 56-63; column 10, lines 44-50; see Figure 5E) configured and controlled by an alarm circuit (180) which is provided power by an auxiliary power supply configured to convert the DC voltage output of the power supply to another power supply voltage (column 9, lines 55-58) to provide warnings for display and/or readout by the user, thereby providing a safer beverage dispensing device. It

Art Unit: 3742

would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Kimura with the lamp, alarm and auxiliary power supply combination of Jarocki et al. to provide warnings for display and/or readout by the user, thereby providing a safer beverage dispensing device.

22. Claims 2-4, 11, 13, 20-23, 26, 27 and 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ihlenfeld (U.S. Patent No. 3,869,968) in view of Hirabayashi et al. (U.S. Patent No. 4,937,600).

Ihlenfeld discloses a beverage apparatus (coffee maker) that is operable with an of AC voltage (see Figure 7), the beverage apparatus including: an AC voltage source; a heating element (heating element 60; coffee pot heater 50) directly coupled to the AC voltage (see Figure 7); and a controller (on-off switch 102) being configured to control the operation of the heating element (heating element 60; coffee pot heater 50).

With respect to claims 29 and 31, Ihlenfeld discloses providing a container (boiler 42; coffee pot 18) for retaining a liquid to be heated (see Figure 7); providing a heating element (heating element 60; coffee pot heater 50); coupling the heating element directly to the supply voltage regardless of whether the supply voltage is the domestic AC voltage or the foreign AC voltage (see Figure 2); providing a controller (on-off switch 102); coupling the controller (on-off switch 102) supply voltage (see Figure 7); operating user inputs (on-off switching functionality) to signal the controller (on-off switch 102) to control the operation of the heating element to heat liquid contained in a container (see Figure 7).

Art Unit: 3742

With respect to the limitations of claim 11, Ihlenfeld discloses a sensor (thermostatic switch 74) to which is couple a signal derived from the voltage of the power supply

With respect to the limitations of claim 13, Ihlenfeld discloses a heated water tank (boiler housing 42), the heating element (heating element 60) being operatively associated with the heated water tank (boiler housing 42) for heating water retained in the tank, wherein the sensor (thermostatic switch 74) senses a temperature of the heated element being operatively associated with the heated water tank for heating water retained in the tank wherein the sensor senses a temperature of the heated water (column 4, line26 – column 5, line 51; column 6, lines 13-68).

With respect to the limitations of claims 21-23, Ihlenfeld discloses a power indication lamp (114) that is used for indicating energization (light on being a notification; alarm being when light is off when the plug is plugged in and the switch 102 is on) to the voltage output of the power supply. Therefore, Ihlenfeld fully meets “a display to which the power supply is coupled”, “light to which the power supply is coupled.”, and “an alarm to which power supply is coupled” given its broadest reasonable interpretation.

Ihlenfeld discloses all of the limitations of the claimed invention, as previously set forth, except for the apparatus being operable over a range of AC voltages; a power supply having an input that couples to an AC voltage source, the power supply having a fixed DC voltage output of substantially a predetermined value regardless of the AC voltage within the range of AC voltages; a heating element directly coupled to the AC

Art Unit: 3742

voltage source in parallel with the power supply; and a controller coupled to the DC voltage output to receive power from the power supply, the controller being configured to control the operation of the heating element; the controller comprising a switch that is closeable to apply a specific AC voltage to the heating element if the beverage apparatus is operated in an area with the specific voltage and to apply a different AC voltage to the heating element if the beverage heating apparatus is operated in an area with a different AC voltage; the controller comprising a processor that controls the switch; the switch comprising a triac; a motor to which the DC voltage output of the power supply is coupled; and a temperature sensor that is coupled to the controller and that provides a signal to the controller which is indicative of a temperature.

However, an apparatus being operable over a range of AC; a power supply having an input that couples to an AC voltage source, the power supply having a fixed DC voltage output of substantially a predetermined value regardless of the AC voltage within the range of AC voltages; a heating element directly coupled to the AC voltage source in parallel with the power supply; and a controller coupled to the DC voltage output to receive power from the power supply, the controller being configured to control the operation of the heating element is known in the art. Hirabayashi et al., for example, teach an apparatus being operable over a range of AC voltages (column 3, lines 47-51; column 4, lines 47-51; see Table 1); a power supply (low voltage source 25) having an input that couples to an AC voltage source (commercial power from power source supplied from plug 26; column 14, line 54 – column 17, line 8; see Figure 17), the power supply having a fixed DC voltage output (low voltage source supplying components

Art Unit: 3742

would have a fixed DC voltage output as required for the control circuit/CPU) of substantially a predetermined value regardless of the AC voltage within the range of AC voltages (column 14, line 54 – column 17, line 8; see Figure 17); a heating element (heating element 5) directly coupled to the AC voltage source (AC) in parallel with the power supply (low voltage source 25) (see combination of Figures 8, 17, 20, 27); and a controller (heater control circuit 4/CPU) coupled to the DC voltage output to receive power from the power supply (low voltage source 25), the controller (heater control circuit 4/CPU) being configured to control the operation of the heating element (column 3, line 6 – column 23, line 5; see Figures 1-29); a switch (triac 30) that is closeable to apply a specific AC voltage to the heating element if the apparatus is operated in an area with the specific voltage and to apply a different AC voltage to the heating element if the heating apparatus is operated in an area with a different AC voltage (column 3, lines 47-51; column 4, lines 47-51; see Table 1); the controller (heater control circuit 4/CPU) comprising a processor (CPU) that controls the switch (triac 30). In addition, Hirabayashi et al. teach the low voltage source (25) being coupled to both the CPU and the motor drive circuit (34) (see combination of Figures 8, 17, 20, 27). Similarly, Hirabayashi et al. teach a motor (35) being power by the output of the DC voltage of the power supply. Hirabayashi et al. also teach a temperature sensor (7) that is coupled to the controller (heater control circuit 4/CPU) and that provides a signal to the controller (heater control circuit 4/CPU) which is indicative of a temperature. Hirabayashi et al. further teach the advantage of such a configuration provides a means for an apparatus to stably operate with plurality of rated voltage of power sources (column 2, lines 12-15),

Art Unit: 3742

thereby increasing the versatility of the apparatus. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Ihlenfeld with a power supply having an input that couples to an AC voltage source, the power supply having a fixed DC voltage output of substantially a predetermined value regardless of the AC voltage within the range of AC voltages; a heating element directly coupled to the AC voltage source in parallel with the power supply; and a controller coupled to the DC voltage output to receive power from the power supply, the controller being configured to control the operation of the heating of Hirabayashi et al. in order to provide a means for an apparatus to stably operate with plurality of rated voltage of power sources (column 2, lines 12-15), thereby increasing the versatility of the apparatus. Furthermore, to provide DC output to the lamp instead of direct AC voltage would have been a mere engineering expediency as Hirabayashi et al. clearly teaches the use low voltage power source to power external components other than the heater.

23. Claims 5-7, 11, 16 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ihlenfeld (U.S. Patent No. 3,869,968) in view of Hirabayashi et al. (U.S. Patent No. 4,937,600) as applied to claims 2-4, 20-23, 27 and 29-31 above, and further in view of Herrick et al. (International Publication WO 00/11914).

Ihlenfeld in view of Hirabayashi et al. discloses all of the limitations of the claimed invention, as previously set forth, except for a solenoid to which the DC voltage output of the power supply is coupled, wherein the solenoid is operable to dispense a

Art Unit: 3742

beverage; valves (dispensing and refill valves) to which the DC voltage output of the power supply is coupled; and a sensor being a capacitance sensor.

However, utilizing a solenoid and valve to which DC voltage is coupled, is known in the art. Herrick et al., for example, teach a liquid pump (15) being a pump or solenoid and being electrically connected to the power supply and permitting flow of product (page 21, lines 19-20; see Figures 1, 17, 22) and inlet/refill and outlet/dispensing sealants (159, 161) functioning as valves having an electrical and fluid seal controllable via electrical connections 163 and 167 (page 23, lines 1-22). Such a DC powered mechanism provides the advantage of providing a non-gravitational control of the fluid flow through a fluid heating system, thereby inherently providing a more accurate means to control a valve.

Herrick et al. further teach that it is known to utilize temperature sensors and conductance sensors together in beverage dispensing apparatus (temperature sensor 19 and a conductance sensor; page 8, line 24 – page 9, line 19; page 18, line 24 - page 19, line 16; see Figures 1, 17, 22) to provide more information about the variables of the fluid to be heated (i.e. flow rate, temperature, conductance), thereby improving the closed control loop regulation of a beverage heating apparatus (page 19, lines 4-21).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the gravitation water inlet/thermostatic control of Ihlenfeld in view of Hirabayashi et al. with a solenoid valve and DC control thereof of Herrick et al. in order to provide a non-gravitational control of the fluid flow through a fluid heating

Art Unit: 3742

system, thereby inherently providing a more accurate means to measure and control fluid flow. It would have further been obvious to one of ordinary skill in the art at the time of the invention was to modify Ihlenfeld in view of Hirabayashi et al. with the addition of a conductance sensor in conjunction with the existing temperature sensor of Herrick et al. in order to provide more information about the variables of the fluid to be heated, thereby improving the closed control loop regulation of a beverage heating apparatus.

24. Claims 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ihlenfeld (U.S. Patent No. 3,869,968) in view of Hirabayashi et al. (U.S. Patent No. 4,937,600) as applied to claims 2-4, 20-23, 27 and 29-31 above, and further in view of Funk (U.S. Publication No. 2001/0048958).

Ihlenfeld in view of Hirabayashi et al. discloses all of the limitations of the claimed invention, as previously set forth, except a concentrate dispenser within the beverage dispenser including a valve that is operable to dispense a beverage concentrate, a pump, having a rotatable shaft, that is operable to move the beverage concentrate and a sensor sensor sensing the speed at which the shaft rotates; and a display.

However, a beverage dispenser comprising a concentrate dispenser including a valve that is operable to dispense a beverage concentrate, a pump, having a rotatable shaft, that is operable to move the beverage concentrate and a sensor sensor sensing the speed at which the shaft rotates, as described by Funk, is known in the art. Funk teaches a concentrate dispenser (32) within the beverage dispenser (20) including a valve that is operable to dispense a beverage concentrate (gating device 62), a pump,

Art Unit: 3742

having a rotatable shaft, that is operable to move the beverage concentrate (pump 60 being a peristaltic pump that inherently has a rotating shaft) and a sensor sensing the speed at which the shaft rotates (a variable speed pump 60 being controllable via a controller inherently has a sensor to control and sense the variable speeds; page 3, paragraph 27-28; see Figure 3) to precisely control amount of concentrate injected into the dilution stream of the beverage dispenser, thereby providing better control of the quality of the dispensed beverage. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Ihlenfeld in view of Hirabayashi et al. with the concentrate dispenser and control thereof of Funk to precisely control amount of concentrate injected into the dilution stream of the beverage dispenser, thereby providing better control of the quality of the dispensed beverage.

25. Claims 14, 15 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ihlenfeld (U.S. Patent No. 3,869,968) in view of Hirabayashi et al. (U.S. Patent No. 4,937,600) as applied to claims 2-4, 20-23, 27 and 29-31 above, and further in view of Herrick et al. (International Publication WO 00/11914).

Ihlenfeld in view of Hirabayashi et al. discloses all of the limitations of the claimed invention, as previously set forth, except for a cooling cabinet and a heat sink and temperature sensors sensing a portion of each component, and both being cooled by a fan coupled to the DC voltage output of the power supply.

However, a beverage dispensing apparatus comprising a cooling cabinet and a heat sink and both being cooled by a fan coupled to the DC voltage output of the power

Art Unit: 3742

supply, as described by Liverani et al., is known in the art. Liverani et al. teach a conventional heat exchanger (5, 34; page 2, paragraphs 31, 35) capable of instantaneously heating water. Liverani et al. further teach that a cooling cabinet (loading compartment 45) for mixing the hot water with the appropriate mixer may be associated with a heat sink (Peltier cell 48) and a cooling fan 50 to cool the heat sink and thereby in return cool the cooling cabinet to prevent the decay of the product, thereby increasing the quality and enjoyment of the dispensed beverage (page 1, paragraphs 7-16; page 2-3, paragraph 36). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Ihlenfeld in view of Hirabayashi et al. with the cooling cabinet / heat sink / fan cooling configuration of Liverani et al. to prevent the decay of the product, thereby increasing the quality and enjoyment of the dispensed beverage.

26. Claims 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ihlenfeld (U.S. Patent No. 3,869,968) in view of Hirabayashi et al. (U.S. Patent No. 4,937,600) as applied to claims 2-4, 20-23, 27 and 29-31 above, and further in view of Jarocki et al. (U.S. Patent No. 6,312,589)..

To the degree it can be argued that Ihlenfeld in view of Hirabayashi et al. does not teach “a display to which the DC voltage output of the power supply is coupled”, “light to which the DC voltage output of the power supply is coupled.”, and “an alarm to which the DC voltage output of the power supply is coupled”, the additional reference is applied is applied to Ihlenfeld in view of Hirabayashi et al. as set forth. In addition,

Art Unit: 3742

Ihlenfeld in view of Hirabayashi et al. discloses all of the limitations of the claimed invention, as previously set forth, except for an auxiliary power supply configured to convert the DC voltage output of the power supply to another power supply voltage.

However, a beverage dispensing apparatus having a light to which the DC voltage output of the power supply is coupled; an alarm to which the DC voltage output of the power supply is coupled; and an auxiliary power supply configured to convert the DC voltage output of the power supply to another power supply voltage, as described by Jarocki et al., is known in the art. Jarocki et al. teach a light (three color LED lamp indicators on the front of control box 45; column 8, lines 45-55; column 10, lines 25-44; see Figure 5D) and an alarm (column 8, lines 56-63; column 10, lines 44-50; see Figure 5E) configured and controlled by an alarm circuit (180) which is provided power by an auxiliary power supply configured to convert the DC voltage output of the power supply to another power supply voltage (column 9, lines 55-58) to provide warnings for display and/or readout by the user, thereby providing a safer beverage dispensing device. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Ihlenfeld in view of Hirabayashi et al. with the lamp, alarm and auxiliary power supply combination of Jarocki et al. to provide warnings for display and/or readout by the user, thereby providing a safer beverage dispensing device.

Prior Art

27. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Art Unit: 3742

Japanese Publication No. JP 05341692 A and JP 2000106262 A to are teachings of the recited power supply apparatus and are deemed equivalent as far as functionality as Hirabayashi et al. with respect to the limitations cited in Hirabayashi et al. above.

Remarks

28. With respect to applicant's reply/argument that the recitation to "fixed DC voltage output" having support in the instant application, the examiner respectfully disagrees.

The examiner can only find disclosure to the DC output being "regulated" as well as being "about 24VDC". However, there is no disclosure to the voltage being "fixed".

Therefore, the 35 U.S.C. 112, first paragraph rejections asserted above are maintained.

29. With respect to applicant's argument that the capacitor (39) is not a fixed DC voltage output of substantially a predetermined value regardless of whether the input is coupled to a domestic AC voltage or a foreign AC voltage, the examiner respectfully disagrees. Kimura explicitly discloses an AC voltage source (35) being connected in parallel to capacitor (39). Kimura further discloses that the controller (relays 32, 33) is driven by DC supply (column 4, lines 35-43). Even though the heater (3) is being driven by the AC source, the relays (32, 33) are driven by a fixed DC supply, or fixed DC power supply, that can only be dependent on the capacitor (39) utilized in the designed configuration (see Figure 2). Therefore, the DC supply, or DC power supply is considered a fixed substantially predetermined value since the hardware capacitor (39) is selected based on a desired configuration and the capacitor (39) will output a fixed

Art Unit: 3742

substantially predetermined value based on the AC voltage input to the capacitor (39) due to the selected capacitor (39). Furthermore, AC voltages are never constant and inherently fluctuate over a range and Kimura would output a fixed substantially predetermined value that is dependent of and relative to the selection of the capacitor (39) regardless of the AC voltage source and the range thereof, since the capacitor (39) is selected based on output and input characteristics.

Furthermore, if the AC voltage is zero, the DC output will be zero. Similarly, if the AC input voltage is infinite, the DC voltage will be infinite. Clearly, the DC voltage output is a fixed substantially predetermined value dependent on the selection characteristics of the capacitor (39), input and desired output, and will definitely change based on the different input due to the selection characteristics of the capacitor (39). Therefore, the term “fixed DC output” is examined as a –constant DC output value– relative to the input and capacitor selection.

Therefore, Kimura fully meets “a power supply having an input that couples to an AC voltage source, the power supply having a fixed DC voltage output of substantially a predetermined value regardless of the AC voltage within the range of AC voltages” (and variations thereof) given its broadest reasonable interpretation.

30. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the DC output voltage being regulated) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the

Art Unit: 3742

specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEPHEN J. RALIS whose telephone number is (571)272-6227. The examiner can normally be reached on Monday - Friday, 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on 571-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3742

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Stephen J Ralis/
Primary Examiner, Art Unit 3742

Stephen J Ralis
Primary Examiner
Art Unit 3742

SJR
December 10, 2008